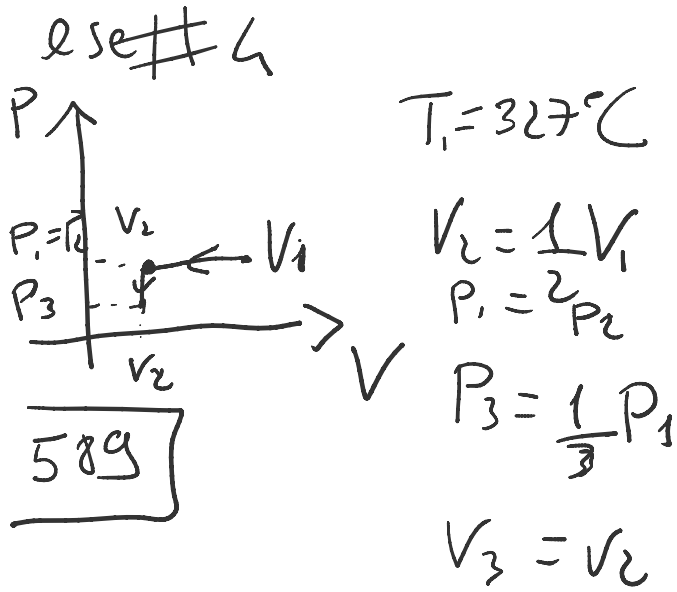




$$PV = nRT$$

$$P_1 V_1 = n R T_1 \quad T_1 = \frac{P_1 V_1}{n R} = 327 + 273 = 600\text{K}$$

$$P_2 V_2 = n R T_2$$

$$P_3 V_3 = n R T_3$$

$$\frac{1}{3} P_1 V_2 = n R T_3$$

$$\frac{1}{3} P_1 \cdot \frac{1}{2} V_1 = n R T_3$$

$$\frac{1}{6} P_1 V_1 = n R T_3$$

$$\frac{1}{6} \frac{P_1 V_1}{n R} = T_3$$

$$\frac{1}{6} T_1 = T_3 \quad T_3 = \frac{1}{6} \cdot 600 = 100\text{K}$$

----- 12721

6

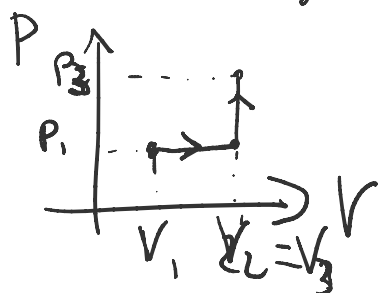
$$T_3 = 100 - 273 = -173^\circ\text{C}$$

585) $T_1 = 27^\circ\text{C}$

$$V_2 = 2V_1 \quad P_2 = P_1$$

$$P_3 = 2P_2 \quad V_3 = V_2$$

$$T_3 = ?$$



$$P_3 V_3 = n R T_3$$

$$\frac{2P_1 \cdot 2V_1}{nR} = \frac{nR T_3}{nR}$$

$$4T_1 = T_3$$

$$T_3 = 4(27 + 273) = 4 \cdot 300$$

$$= 1200\text{K} = 1200 - 273 = 927^\circ\text{C}$$

624

$$Q_{\text{Ass}} = 1500 \text{ Kcal}$$

$$Q_{\text{ced}} = 1000 \text{ Kcal}$$

$$\angle \quad \eta = ?$$

$$\angle \quad \eta = !$$

$$\angle = Q_{\text{ASS}} - Q_{\text{CED}} = 500 \text{ Kcal}$$

$$= 2093 \text{ KJ}$$

$$\eta = 1 - \frac{Q_{\text{CED}}}{Q_{\text{ASS}}} = 1 - \frac{1000}{1500} = 1 - \frac{2}{3}$$

$$= \frac{1}{3} = 0,33 = 33,3\%$$

$$\boxed{628} \quad T_1 = 27^\circ\text{C} \quad | \quad T_2 = -63^\circ\text{C}$$

$$= 300 \text{ K} \quad \quad \quad = 210 \text{ K}$$

$$\eta = 1 - \frac{Q_{\text{CED}}}{Q_{\text{ASS}}} = 1 - \frac{T_2}{T_1}$$

$$2\eta \quad T_2 \quad T_1' = ?$$

$$\eta' = 2\eta \quad T_2' = T_2 \quad T_1' = ?$$

$$1 - \frac{T_2'}{T_1'} = 2 \left(1 - \frac{T_2}{T_1} \right)$$

$$1 - \frac{T_2}{T_1'} = 2 \left(1 - \frac{T_2}{T_1} \right)$$

$$1 - \frac{210}{T_1'} = 2 \left(1 - \frac{\overset{7}{210}}{\underset{10}{300}} \right)$$

$$1 - \frac{210}{T_1'} = 2(0,3)$$

$$1 - \frac{210}{T_1'} = 0,6$$

$$0,4 = \frac{210}{T_1'}$$

$$T_1' = \frac{210}{0,4} = \frac{210}{4 \cdot 10^{-1}} = \frac{105 \cdot 10}{2}$$

$$= \frac{1050}{2} = 525 \text{ K}$$

$$T_1' = 525 - 273 = 252^\circ\text{C}$$

$$T = -273^\circ\text{C} \quad T_1 = -123^\circ\text{C}$$

$$T_1 = -273^\circ\text{C}$$

$$= 200\text{K}$$

$$T_2 = -123^\circ\text{C}$$

$$= 150\text{K}$$

$$T_1' = 1$$

$$T_2' = T_2$$

$$\eta' = 2\eta$$

$$1 - \frac{T_2'}{T_1'} = 2 \left(1 - \frac{T_2}{T_1} \right)$$

$$1 - \frac{T_2}{T_1'} = 2 \left(1 - \frac{T_2}{T_1} \right)$$

$$1 - \frac{150}{T_1'} = 2 \left(1 - \frac{150}{200} \right)$$

$$1 - \frac{150}{T_1'} = 2 \left(\frac{1}{2} \right)$$

$$\frac{+150}{T_1'} = +\frac{1}{2}$$

$$T_1' = 150 \cdot 2 = 300\text{K}$$

59,1

$$T = \overset{300\text{K}}{-273^\circ\text{C}} \quad T_1 = \overset{600\text{K}}{327^\circ\text{C}}$$

596

$$T_1 = 27^{\circ}\text{C}$$

$$P_1 = P_2$$

$$T_2 = 327^{\circ}\text{C}$$

$$\frac{V_2}{V_1} = ?$$

$$P_1 V_1 = n R T_1$$

$$\frac{V_1}{T_1} = \frac{n R}{P_1}$$

$$P_2 V_2 = n R T_2$$

$$\frac{V_2}{T_2} = \frac{n R}{P_2}$$

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$T_2 \cdot \frac{1}{T_1} = \frac{V_2}{V_1} \cdot T_1$$

$$\frac{T_2}{T_1} = \frac{V_2}{V_1}$$

$$\frac{V_2}{V_1} = \frac{600}{300} = 2$$

599

$$V_1 = 25 \text{ l} \quad P_1 = 2 \text{ atm}$$

$$V_2 = ? \quad P_2 = 10 \text{ atm}$$

$$V_2 = ? \quad P_2 = 10 \text{ atm}$$

$$P_1 V_1 = \underline{\underline{nRT_1}} \quad P_2 V_2 = \underline{\underline{nRT_2}}$$

$$P_1 V_1 = P_2 V_2$$

$$\underline{2 \text{ atm} \cdot 25 \text{ l}} = \underline{10 \text{ atm} V_2}$$

$10 \text{ atm} \quad 10 \text{ atm}$

$$V_2 = \frac{2 \text{ atm} \cdot 25 \text{ l}}{10 \text{ atm}} = 5 \text{ l}$$

$$\boxed{573} \quad Q = ?$$

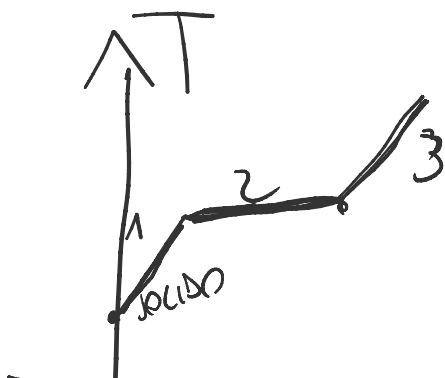
$$m = 1 \text{ kg}$$

$$T_1 = -10^\circ \text{C}$$

$$T_f = 10^\circ \text{C}$$

$$T_2 = 0^\circ \text{C}$$

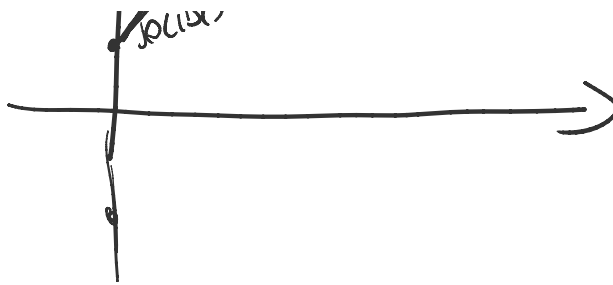
$$Q = mc\Delta T$$



$$Q_1 = m c_{\text{ghiaccio}} \Delta T$$

$$Q_2 = L_m$$

$$Q_3 = m c_{\text{acqua}} \Delta T$$


 $Q_3 = m C \Delta T$

$$Q_1 = 1 \cdot 2100 \cdot 10 = 21000 \text{ J}$$

21 KJ

$$Q_2 = 330 \text{ K} \cdot 1 = 330 \text{ KJ}$$

$$Q_3 = 1 \cdot 4186 \cdot 10 = 41860 \text{ J}$$

41,86 KJ

$$Q_{\text{TOT}} = Q_1 + Q_2 + Q_3 =$$

$$= 21 + 330 + 41,86 =$$

$$= 392,86 \text{ KJ}$$

564

$$\frac{Q}{t} = -K A \frac{dT}{dx}$$

$$A \rightarrow 2A \quad x \rightarrow 2x$$

$$\frac{Q}{t} = \text{costante}$$

$$A \rightarrow 2A \quad x \rightarrow 4x$$

$$\therefore \Delta T = 1 \text{ C}$$

$$= -k \frac{2A}{\cancel{2} \cancel{A}} dt = \frac{1Q}{2t}$$

$$\frac{2A}{\cancel{2} \cancel{A}} = 8 \frac{Q}{t}$$



$$Q = c_m \Delta T$$

$\frac{J}{kg \cdot ^\circ C}$

$$Q = C \Delta T$$

$C = c_m \cdot ^\circ C$